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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))

Attorney Docket No. 678-521(P8994)

First Inventor or Application Identifier Jun-Sik JANG

Title DEVICE FOR AND METHOD OF...

Express Mail Label No. EL484187144US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents

1. * Fee Transmittal Form (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
2. Specification [Total Pages 20]
(preferred arrangement set forth below)
 - Descriptive title of the Invention
 - Cross References to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to Microfiche Appendix
 - Background of the Invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
3. Drawing(s) (35 U.S.C. 113) [Total Sheets 4]
4. Oath or Declaration [Total Pages 2]
 - a. Newly executed (original or copy)
 - b. Copy from a prior application (37 C.F.R. § 1.63(d))
(for continuation/divisional with Box 16 completed)
 - i. DELETION OF INVENTOR(S)
Signed statement attached deleting
inventor(s) named in the prior application,
see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).

***NOTE FOR ITEMS 1 & 13: IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28).**

ADDRESS TO: Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

5. Microfiche Computer Program (Appendix)
6. Nucleotide and/or Amino Acid Sequence Submission
(if applicable, all necessary)
 - a. Computer Readable Copy
 - b. Paper Copy (identical to computer copy)
 - c. Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

7. Assignment Papers (cover sheet & document(s))
8. 37 C.F.R. § 3.73(b) Statement Power of
(when there is an assignee) Attorney
9. English Translation Document (if applicable)
10. Information Disclosure Statement (IDS)/PTO-1449 Copies of IDS
Statement (IDS)/PTO-1449 Citations
11. Preliminary Amendment
12. Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)
13. * Small Entity Statement(s) Statement filed in prior application,
(PTO/SB/09-12) Status still proper and desired
14. Certified Copy of Priority Document(s)
(if foreign priority is claimed)
15. Other: Check for \$924.00 (filing)
 Check for \$40.00 (recording)

16. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment.

Continuation Divisional Continuation-in-part (CIP) of prior application No. _____ / _____

Prior application information Examiner _____ Group / Art Unit _____

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

17. CORRESPONDENCE ADDRESS

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Dated: 8/18/00

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PATENT

Atty. Docket No. 678-521 (P8994)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

08/18/00
JC784 U.S. PTO

Assistant Commissioner for Patents
Washington, D.C. 20231

UTILITY APPLICATION FEE TRANSMITTAL

Sir:

Transmitted herewith for filing is the patent application of
Inventor(s). Jun-Sik JANG

For: DEVICE FOR AND METHOD OF OUTPUTTING DATA ON
DISPLAY SECTION OF PORTABLE TELEPHONE

Enclosed are:

[x] 12 page(s) of specification
[x] 1 page(s) of Abstract
[x] 7 page(s) of claims
[x] 4 sheets of drawings [x] formal [] informal
[x] 2 page(s) of Declaration and Power of Attorney
[x] An Assignment of the invention to Samsung Electronics
Co., Ltd.

CERTIFICATION UNDER 37 C.F.R. §1.10

I hereby certify that this New Application Transmittal and the documents referred to as enclosed therein are being deposited with the United States Postal Service on this date August 18, 2000 in an envelope as "Express Mail Post Office to Addressee" Mail Label Number EL484187144US addressed to: Assistant Commissioner of Patents and Trademarks, Washington, D.C. 20231.

Ilseok Jang

Certified copy of application

<u>Country</u>	<u>Appln. No.</u>	<u>Filed</u>
Korea	1999-34067	August 18, 1999

from which priority under Title 35 United States Code, §119 is claimed

is enclosed.

will follow.

CALCULATION OF UTILITY APPLICATION FEE

For	Number Filed	Number Extra	Rate	Basic Fee
Total				\$690.00
Claims*	11	-20 = 0	x \$ 18.00	\$.00
Independent Claims	6	-3 = 3	x \$ 78.00	\$234.00
Multiple Claims	[] yes	Add'l. Fee	\$260.00	\$
Dependent Claims	[x] no	Add'l. Fee	None	= \$.00
				TOTAL <u>\$924.00</u>

Verified Statement of "Small Entity" Status Under 37 C.F.R. §1.27. Reduced fees under 37 C.F.R. § 1.9(f) (50% of total) paid herewith \$ _____.

The amount of \$40.00 for recording the attached Assignment is included in the enclosed check.

A check in the amount of \$924.00 to cover the [] recording, filing fee(s) is attached.

Charge fee to Deposit Account No. 04-1121. Order No. _____
TWO (2) COPIES OF THIS SHEET ARE ENCLOSED.

*Includes all independent and single dependent claims and all claims referred to in multiple claims.
See 37 C.F.R. § 1.75(c).

[X] Please charge any deficiency as well as any other fee(s) which may become due under 37 C.F.R. § 1.16 and 1.17, at any time during the pendency of this application, or credit any overpayment of such fee(s) to Deposit Account No. 04-1121. Also, in the event any extensions of time for responding are required for the pending application(s), please treat this paper as a petition to extend the time as required and charge Deposit Account No. 04-1121 therefor. TWO (2) COPIES OF THIS SHEET ARE ENCLOSED.

Date: August 18, 2000



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DEVICE FOR AND METHOD OF OUTPUTTING DATA ON DISPLAY

SECTION OF PORTABLE TELEPHONE

BACKGROUND OF THE INVENTION

1. Field of the Invention

5 The present invention relates to an outputting function of a portable telephone, and more particularly to a device for and a method of audio outputting data information displayed on a display section of the portable telephone.

2. Description of the Related Art

10 In general, portable telephones include a variety of functions for users. For example, there are display data functions such as a receiving field strength of a radio wave, the current time and date and a telephone directory function, etc. But, such a function of displaying data information like the current time and date, etc., on the display section is the only means of outputting the data information displayed on the screen of the display section. However, it is very difficult for visually handicapped persons or persons having weak sight to read the data information displayed on the display section. Further, in the case where users use a portable telephone not including a separate display section installed on the exterior thereof, such as folder type portable telephones, there has been a problem in that the user suffers an inconvenience in having to open a closed folder or a cover in order to see data information displayed on the display section.

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SUMMARY OF THE INVENTION

Therefore, the present invention has been made in an effort to solve the problems occurring in the prior art, and an object of the present invention is to provide a device for and a method of audio outputting, for example as a voice, the display data information displayed on a display section of portable telephones in response to the 5 selection of a user.

In order to achieve the above object, according to the present invention, there is provided a device for audio outputting display data information displayed on a display section of a portable telephone, comprising:

- an audio output key for selecting an audio output mode of the portable 10 telephone;
- a memory for storing the display data;
- an audio memory for storing audio data corresponding to the audio output mode of the portable telephone;
- an audio processing section for modulating an audio signal inputted from a 15 microphone and for converting said audio signal into audio data, and for demodulating audio data inputted from an RF processing section and audio data stored in the audio memory to convert into an audio signal and for outputting said audio signal as a voice; and
- a control section, when said audio output mode is selected by manipulation of 20 the audio output key, for reading out the data displayed in the display section from the memory and the audio data from the audio memory and for controlling said data read out from the memory and the audio data read out from the audio memory to output said data through the audio processing section.

In a second embodiment, there is provided a device for audio outputting display information displayed on a display section of a portable telephone, comprising:

an audio output key for selecting an audio output mode of the portable telephone;

5 a memory for storing data displayed on the display section of the portable telephone;

an audio memory for storing audio data corresponding to the audio output mode of the portable telephone;

10 an audio processing section for modulating an audio signal inputted from a microphone, for converting said audio signal into audio data, for demodulating audio data inputted from an RF processing section and audio data stored in the audio memory to convert into an audio signal, and for outputting said audio signal as a voice; and,

15 a control section, when said audio output mode is selected by manipulation of the audio output key, for reading out the data displayed in the display section from the memory and the audio data from the audio memory, and for controlling said audio processing section to output said audio data as said voice.

BRIEF DESCRIPTION OF THE DRAWINGS

20 The foregoing and other objects, features and advantages of the present invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings in which:

Fig. 1 is a schematic block diagram illustrating the construction of a device for outputting, as a voice, data information displayed on a display section of a portable telephone according to a preferred embodiment of the present invention;

Figs. 2A and 2B are a control flowchart illustrating the process for outputting, as a voice, data information displayed on a display section of a portable telephone according to a preferred embodiment of the present invention; and

Fig. 3 is a perspective view illustrating a folder type portable telephone including an audio output key installed thereon according to a preferred embodiment of the present invention, in which a folder of the portable telephone is closed.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Reference will now be made in greater detail to the preferred embodiments of the present invention. In the drawings, the same or similar elements are denoted by the same reference numerals even though they are depicted in different drawings. In the following description of the present invention, numerous specific details, such as specific circuit elements, are set forth to provide a more thorough understanding of the present invention. It will be apparent, however, to those skilled in the art that the invention may be practiced otherwise than according to the previously mentioned specific details. The detailed description of known functions and configurations incorporated herein are omitted when it may make the subject matter of the present invention unclear.

Fig. 1 is a schematic block diagram illustrating the construction of a device for outputting, as an audio, data information displayed on a display section of a portable telephone 200 according to a preferred embodiment of the present invention.

Referring to Fig. 1, a control section 100 of a portable telephone 200 according to one embodiment of the present invention controls the overall operation of the portable telephone 200. An audio memory 110 stores various audio data, such as

a time audio data according to the present invention, an audio data of received messages, an audio data of not-received messages, an audio data of bell/vibration, an audio data of an antenna receiving electric field strength, etc. A memory 120 includes a ROM for storing an operation program, an Electrically Erasable and Programmable ROM (EEPROM), and a RAM. A key input section 130 includes a plurality of numeral keys, and function keys for performing various functions (for example, an audio output key 210 shown in Fig. 3, a time mode selecting key, a received message mode selecting key, a bell/vibration mode selecting key, and an antenna receiving electric field strength mode selecting key), and is adapted to output corresponding data according to the depression of any one of the function keys to the control section 100 by an external operation. A display section 140, which is typically implemented by a display device such as a liquid crystal display (LCD) device, etc., driven under the control of the control section 100, is adapted to display the present state of the portable telephone or the progress situation of a program under the control of the control section 100. An RF (radio frequency) processing section 150 converts an audio signal inputted from a microphone into a digital signal for transmission to a base station through the antenna under the control of the control section 100. In other words, the RF processing section 150 performs the entire processing of the radio signal transmission and reception between the portable telephone and the base station to which the portable telephone belongs. Specifically, the RF processing section 150 converts an input audio signal of a radio frequency band to an intermediate frequency (IF) signal, converts the IF signal to a baseband signal, and then converts the baseband signal to a digital signal. A ring tone generator 160 generates a ring tone through a speaker 190 under the control of the control section 100. An audio processing section 170 modulates audio signals inputted from the microphone 195 for conversion to audio data, and demodulates audio data inputted from the RF processing section 150 and audio data stored in the audio memory 110 to

an audio signal to output the demodulated audio signal as voice to the outside through the speaker 190.

The portable telephone 200 used in the present invention generally refers to a portable telephone employing the method of CDMA (Code Division Multiple Access). 5 In the CDMA type telecommunication, the use of a Global Positioning System (GPS) allows for acquisition of time information from a communication satellite. A base station provides such time information to a telecommunication terminal over a sync channel. At this time, the information transferred through the sync channel carries only one message called a sync channel message. A mobile station is provided with 10 system parameters through this sync channel message. Among these parameters, the most important parameter is the time offset of pilot PN (Pseudo Noise) sequence of a base station associated with a system time and a data transmission speed of a calling channel.

15 Figs. 2A and 2B are a control flowchart illustrating the process for outputting, as a voice, data information displayed on a display section of a portable telephone according to a preferred embodiment of the present invention.

A preferred embodiment of the present invention will be described in detail hereinafter with reference to Figs. 1 to 3. The portable telephone may be in an active or a standby state.

20 First, at step 301, the control section 100 determines whether or not the power supply of the portable telephone 200 is switched on. If it is determined at step 301 that the power supply of the portable telephone 200 is switched on, the program proceeds to step 302 in which the control section 100 detects display data displayed on

the display section 140 of the portable telephone 200. At subsequent step 303, the control section 100 determines whether or not an audio output key 210 is depressed through the key input section 130. If it is determined at step 303 that the audio output key 210 is depressed through the key input section 130, the program proceeds to step 5 304 where the control section 100 determines whether or not a time mode selecting key (not shown) is depressed. At step 304, if it is determined that the time mode selecting key (not shown) is depressed so that the audio output mode is switched into the time mode, the program proceeds to step 305 where the control section 100 determines whether or not a received message mode selecting key is depressed. If at 10 step 304 the time mode selecting key is not depressed, the process returns to step 301. If at step 305 the answer is NO, that is, if it is determined at step 305 that the received message mode selecting key (not shown) is not depressed, the program proceeds to step 306 where the control section 100 reads out time data stored in the memory 120. At this point, the control section 100 detects time data (including date data) received 15 from the base station through the sync channel. The control section 100 calculates the present time according to the time data detected at step 306 by driving the timer 180. At this point, the calculated present time data is updated to be stored in the memory 120 and the control section 100 reads out time and date data stored in the memory 120. Subsequently, the program proceeds to step 307 where the control section 100 reads 20 out an audio data of time stored in the audio memory 110, and a voice message is output at step 308 by speaker 190.

At this time, it should be noted that the time audio data stored in the audio memory 110 can be stored in various manners through a variety of design modifications.

110 as shown in Table 1, the process for the time audio data to be outputted as a voice through the speaker will be described hereinafter.

5

[Table 1]

Address	Number audio data	Unit audio data	Additional audio data
1	One	a.m.	It (the present time)
2	Two	p.m.	Is
3	Three	Past/to	Just
4	Four	Minute(s)	
5	Five	Second(s)	
6	Six		
7	Seven		
8	Eight		
9	Nine		
10	Ten		

First, it is assumed that it is just five minutes past one a.m. Then, the control section 100 reads out data of "It" stored at address 1 of the additional audio data and data of "is" stored at address 2 of the unit audio data, which are stored in the audio memory 110. Also, the control section 100 reads out data of "just" stored at address 3 of the additional audio data. After that, the control section 100 reads out data of "five" stored at address 5 of the cardinal number audio data, data of "minutes" stored at address 4 of the unit audio data, and data of "past" stored at address 3 of the unit audio data. Lastly, the control section 100 reads out data of "one" stored at address 1

of the cardinal number audio data and data of "a.m." stored at address 1 of the unit audio data, respectively. Then, the control section 100 finally combines these data to synthesize an audio data such as "It is just five minutes past one a.m."

Subsequently, the program proceeds to step 308 where the control section 100
5 controls the audio processing section 170 to convert the time audio data into an analog data and output the converted audio data through speaker 190. The voice outputted finally according to the process is follows: "It is just five minutes past one a.m."

Meanwhile, if it is determined at step 305 that a received message mode selecting key is depressed while a time mode selecting key is being depressed through the key input section 130, the program proceeds to step 309 in Fig. 2B where the control section 100 determines whether or not a bell/vibration mode selecting key is depressed while the received message mode selecting key is depressed through the key input section 130. If it is determined at step 309 that the bell/vibration mode selecting key is not depressed and, if it is determined that the received message mode selecting key is depressed through the key input section 130 at step 305, the program proceeds to step 310 where the control section 100 determines whether or not there is any received message. If it is determined at step 310 that there is a received message, the program proceeds to step 311 where the control section 100 reads out the received message data stored in the memory 120. Then, at step 312, the control section 100 reads out a received message audio data corresponding to the received message data, which is stored in the audio memory 110. On the other hand, if it is determined at 15 310 that there is not any received message, the program proceeds to step 313 where the control section 100 reads out a not-received message audio data stored in the audio memory 110.
20

In the meantime, if it is determined at step 309 that the bell/vibration mode selecting key is depressed through the key input section 130, the program proceeds to step 314 where the control section 100 determines whether or not an antenna receiving electric field strength mode selecting key is depressed while the bell/vibration mode selecting key is depressed through the key input section 130. If it is determined at step 314 that the antenna receiving electric field strength mode selecting key is not depressed so that the audio output mode is not switched into an antenna receiving electric field strength mode (i.e., if it is determined that the bell/vibration mode selecting key is depressed through the key input section 130 at step 309 and the antenna receiving electric field strength mode selecting key is not depressed at step 314), the program proceeds to step 315 where the control section 100 reads out a bell/vibration data stored in the memory 120. Then, at step 316, the control section 100 reads out a bell/vibration audio data corresponding to the bell/vibration data, which is stored in the audio memory 110.

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In the meantime, if it is determined at step 314 that the antenna receiving electric field strength mode selecting key is depressed through the key input section 130, the program proceeds to step 317 where the control section 100 reads out a antenna receiving electric field strength data stored in the memory 120. Then, at step 20 318, the control section 100 reads out an antenna receiving electric field strength audio data corresponding to the antenna receiving electric field strength data, which is stored in the audio memory 110.

The control section 100 controls the program to proceed from the steps 312, 25 313, 316 and 318 to the step 308 so that the audio processing section 170 converts each of the corresponding audio data into an analog data to output the converted data to the outside through the speaker 190.

Meanwhile, if it is determined at step 303 that the audio output key is not depressed, the program returns to the previous step 301 where the control section 100 performs the series of preceding steps again.

5 While there has been described what is at present considered to be the preferred embodiment of the present invention, it will be understood by those skilled in the art that various modifications may be made therein without departing from the spirit and scope of the present invention. That is, although the audio output key 210, the time mode selecting key, the received message mode selecting key, the bell/vibration mode selecting key, and the antenna receiving electric field strength mode selecting key have been described therein in such a manner that they are constructed separately in the portable telephone, it should be noted that they may be implemented to one multi-function key including a function of each of the mode selecting keys. For example, in the present invention as a separately mounted audio output key is depressed, and then the time mode selecting key, the received message mode selecting key, the bell/vibration mode selecting key, and the antenna receiving electric field strength mode selecting key are depressed sequentially, a corresponding audio data stored in the audio memory 110 is outputted to the outside. However, the several functional keys set forth may be implemented to one multi-function key.

10 Further, in the present invention, although there has been described a device for and a method of audio outputting data displayed on the display section 140 of the portable telephone 200 in which a corresponding audio data is outputted to the outside as users select any one of the set forth several function keys directly, it should be noted that the present invention may be implemented such that only once key manipulation allows

15 data information displayed on the display section 140 of the portable telephone 200 to be outputted sequentially, as voice, to the outside. That is, as shown in Fig. 3, the present invention may be implemented in such a manner that when users depress the

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audio output key 210 of the portable telephone 200 only once, the time audio data first is outputted, and then, the received message audio data, the bell/vibration audio data and the antenna receiving electric field strength audio data are outputted in order to the outside so that data information displayed on the display section 140 of the portable telephone 200 can be outputted, as voice, to the outside by a simpler manipulation of the audio output key.

As can be seen from the foregoing, according to a device for and a method of outputting, as a voice, data information displayed on a display section of a portable telephone, data information displayed on the display section of the portable telephone can be outputted, as a voice, to the outside so that it is useful to visually handicapped persons. Further, even in case of using a portable telephone not including a separate display section installed on the exterior thereof, such as folder type portable telephones, users can identify easily, in a voice, data information displayed on the display section of the portable telephone without opening a closed folder in order to see the data information displayed on the display section.

Therefore, while this invention has been described in connection with what is presently considered to be the most practical and preferred embodiment, it is to be understood that the invention is not limited to the disclosed embodiment, but, on the contrary, it is intended to cover various modifications within the spirit and scope of the appended claims.

WHAT IS CLAIMED IS:

1. A device for outputting, as a voice, data information displayed on a display section of a portable telephone, comprising:

an audio output key for selecting an audio output mode of the portable telephone;

a memory for storing data displayed on the display section of the portable telephone;

an audio memory for storing audio data corresponding to the audio output mode of the portable telephone;

10 an audio processing section for modulating an audio signal inputted from a microphone, for converting said audio signal into audio data, for demodulating audio data inputted from an RF processing section and audio data stored in the audio memory to convert into an audio signal, and for outputting said audio signal as a voice; and,

15 a control section, when said audio output mode is selected by manipulation of the audio output key, for reading out the data displayed in the display section from the memory and the audio data from the audio memory, and for transmitting the audio data to the said audio processing section for outputting as said voice.

20 2. The device according to claim 1 further comprising a time mode selecting key for switching the audio output mode of the portable telephone into a time mode while the audio output mode of the portable telephone is selected in response to depression of the audio output key, wherein a time data displayed on the display section of the portable telephone is read out from the memory and a time audio data corresponding to the time data is read out from the audio memory in response to 25 depression of the time mode selecting key so that the read out-time audio data is

outputted as said voice through the audio processing section and then a speaker.

3. The device according to claim 2 further comprising a received message mode selecting key for switching the audio output mode of the portable telephone into a received message mode while the audio output mode is switched into the time mode,
5 wherein a received message data displayed on the display section of the portable telephone is read out from the memory and a received message audio data corresponding to the received message data is read out from the audio memory in response to depression of the received message mode selecting key so that the readout received message audio data is outputted as said voice through the audio processing
10 section and then the speaker.

4. The device according to claim 3 further comprising a bell/vibration mode selecting key for switching the audio output mode of the portable telephone into a bell/vibration mode while the audio output mode is switched into the received message mode thereof, wherein a bell/vibration data displayed on the display section of the portable telephone is read out from the memory and a bell/vibration audio data corresponding to the bell/vibration data is read out from the audio memory in response to depression of the bell/vibration mode selecting key so that the read out bell/vibration audio data is outputted as said voice through the audio processing section and then the speaker.
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20 5. The device according to claim 4 further comprising an antenna receiving electric field strength mode selecting key for switching the audio output mode of the portable telephone into an antenna receiving electric field strength mode while the audio output mode is switched into the bell/vibration mode, wherein an antenna receiving electric field strength data displayed on the display section of the portable

telephone is read out from the memory and an antenna receiving electric field strength audio data corresponding to the antenna receiving electric field strength data is read out from the audio memory in response to depression of the antenna receiving electric field strength mode selecting key so that the read out- antenna receiving electric field strength audio data is outputted as said voice through the audio processing section and then the speaker.

6. A device for audio outputting display data information displayed on a display section of a portable telephone, comprising:

10 an audio output key adapted to select an audio output mode of the portable telephone;

 a time mode selecting key adapted to switch the audio output mode of the portable telephone into a time mode while the audio output mode of the portable telephone is selected in response to depression of the audio output key;

15 a received message mode selecting key adapted to switch the audio output mode of the portable telephone into a received message mode while the audio output mode is switched into the time mode;

 a bell/vibration mode selecting key adapted to switch the audio output mode of the portable telephone into a bell/vibration mode while the audio output mode is switched into the received message mode;

20 an antenna receiving electric field strength mode selecting key adapted to switch the audio output mode of the portable telephone into an antenna receiving electric field strength mode while the audio output mode is switched into the bell/vibration mode;

 a memory adapted to store each data displayed on the display section of the portable telephone;

25 an audio memory adapted to store each audio data corresponding to the audio

output mode of the portable telephone;

an audio processing section adapted to modulate an audio signal inputted from a microphone for conversion to an audio data, and demodulate an audio data inputted from an RF processing section and the audio data stored in the audio memory to an audio signal to output the demodulated audio signal as a voice through a speaker; and

5 a control section adapted to read out the data displayed in the display section from the memory and the audio data corresponding to a selected audio output mode from the audio memory, respectively, when each of the mode selecting keys is depressed while a predetermined audio output mode is selected by manipulation of the 10 audio output key to control the data read out from the memory and the audio data read out from the audio memory so that the audio data is outputted as a voice through the audio processing section and a speaker.

15 7. The device according to claim 6, wherein the audio output key, the time mode selecting key, the received message mode selecting key, the bell/vibration mode selecting key, and the antenna receiving electric field strength mode selecting key are constructed as a single multi-function key which includes a function of each of the mode selecting keys.

20 8. A method of outputting, as a voice, data information displayed on a display section of a portable telephone including an audio output key, comprising the steps of:

detecting data displayed on the display section in response to the selective depression of the audio output key; and

reading out audio data corresponding to the detected data from an audio memory and outputting, as a voice, sequentially audio data corresponding to the data information displayed on the display section.

9. A method of outputting, as a voice, data information displayed on a display section of a portable telephone including an audio output key, comprising the steps of:

detecting data displayed on the display section in a standby state of the portable telephone;

5 determining whether or not the audio output key is depressed;

storing data displayed on the display section in a memory while a corresponding audio output mode is selected in response to depression of the audio output key;

10 reading out the data stored in the memory and an audio data corresponding to the readout data from an audio memory; and

outputting, as a voice, the readout audio data through a speaker.

10. A method of outputting, as a voice, data information displayed on a display section of a portable telephone including an audio output key, a time mode selecting key, a received message mode selecting key, a bell/vibration mode selecting key, and a antenna receiving electric field strength mode selecting key comprising the steps of:

selecting an audio output mode of the portable telephone;

20 switching the audio output mode of the portable telephone into a time mode in response to depression of the time mode selecting key while the audio output mode of the portable telephone is selected in response to depression of the audio output key;

switching the audio output mode of the portable telephone into a received message mode in response to depression of the received message mode selecting key while the audio output mode is switched into the time mode;

25 switching the audio output mode of the portable telephone into a bell/vibration mode in response to depression of the bell/vibration mode selecting key while the audio output mode is switched into the received message mode;

switching the audio output mode of the portable telephone into an antenna receiving electric field strength mode in response to depression of the antenna receiving electric field strength mode selecting key while the audio output mode is switched into the bell/vibration mode;

5 storing each data displayed on the display section of the portable telephone in a memory;

 storing each audio data corresponding to the audio output mode of the portable telephone in an audio memory;

10 modulating an audio signal inputted from a microphone for conversion to an audio data, and demodulating an audio data inputted from an RF processing section and the audio data stored in the audio memory to an audio signal through an audio processing section to output the demodulated audio signal as voice through a speaker; and

15 reading out the data displayed in the display section from the memory and the audio data corresponding to a selected audio output mode from the audio memory, respectively, when each of the mode selecting keys is depressed while a predetermined audio output mode is selected by manipulation of the audio output key to control the data read out from the memory and the audio data read out from the audio memory so that the audio data is outputted as a voice through the audio processing section and the 20 speaker.

11. A device for outputting, as a voice, data information displayed on a display section of a portable telephone, comprising:

25 an audio output key for selecting an audio output mode of the portable telephone;

 a memory for storing data displayed on the display section of the portable telephone;

an audio memory for storing audio data corresponding to the audio output mode of the portable telephone;

5 an audio processing section for modulating an audio signal inputted from a microphone, for converting said audio signal into audio data, for demodulating audio data inputted from an RF processing section and audio data stored in the audio memory to convert into an audio signal, and for outputting said audio signal as a voice; and,

10 a control section, when said audio output mode is selected by manipulation of the audio output key, for reading out the data displayed in the display section from the memory and the audio data from the audio memory, and for controlling said audio processing section to output said audio data as said voice.

DETAILED DESCRIPTION

ABSTRACT OF THE DISCLOSURE

Disclosed is a device for outputting display data information displayed on a display section as audio of a portable telephone, comprising: an audio output key for selecting an audio output mode of the portable telephone; a memory for storing the data displayed on the display section of the portable telephone; an audio memory for storing an audio data corresponding to the audio output mode of the portable telephone; an audio processing section adapted to modulate an audio signal inputted from a microphone for conversion to an audio data, and demodulate an audio data inputted from an RF processing section and the audio data stored in the audio memory to an audio signal to output the demodulated audio signal as voice to the outside through a speaker; and a control section adapted to read out the data displayed in the display section from the memory and the audio data corresponding to a selected audio output mode from the audio memory, respectively, when a predetermined audio output mode is selected by manipulation of the audio output key to control the data read out from the memory and the audio data read out from the audio memory so that the audio data is outputted as voice to the outside through the audio processing section.

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Jun-Sik JANG

Docket: 678-521

Serial No.: [not yet assigned]

Date: August 18, 2000

Filed: August 18, 2000

For: DEVICE FOR AND METHOD OF
OUTPUTTING DATA ON DISPLAY
SECTION OF PORTABLE TELEPHONE

Assistant Commissioner for Patents
Washington, D.C. 20231

TRANSMITTAL OF FORMAL DRAWINGS

Sir:

Applicants transmit herewith four (4) sheets of formal drawings including
Figs. 1-3 for the above-identified patent application.

Respectfully submitted,



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PJF/IJ:mg

CERTIFICATION UNDER 37 C.F.R. §1.10

I hereby certify that this New Application Transmittal and the documents referred to as
enclosed therein are being deposited with the United States Postal Service on this date August 18, 2000,
in an envelope as "Express Mail Post Office to Addressee" Mail Label Number EL484187144US
addressed to: Assistant Commissioner of Patents and Trademarks, Washington, D.C. 20231.



Ilseok Jang

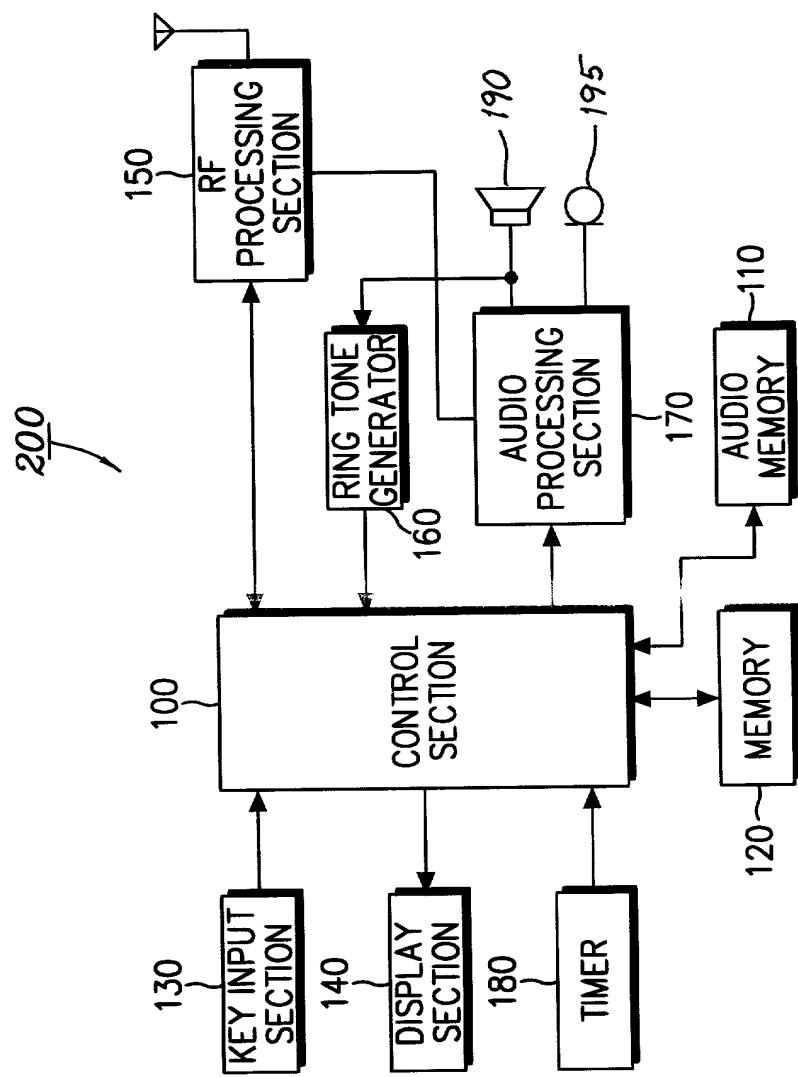


FIG. 1

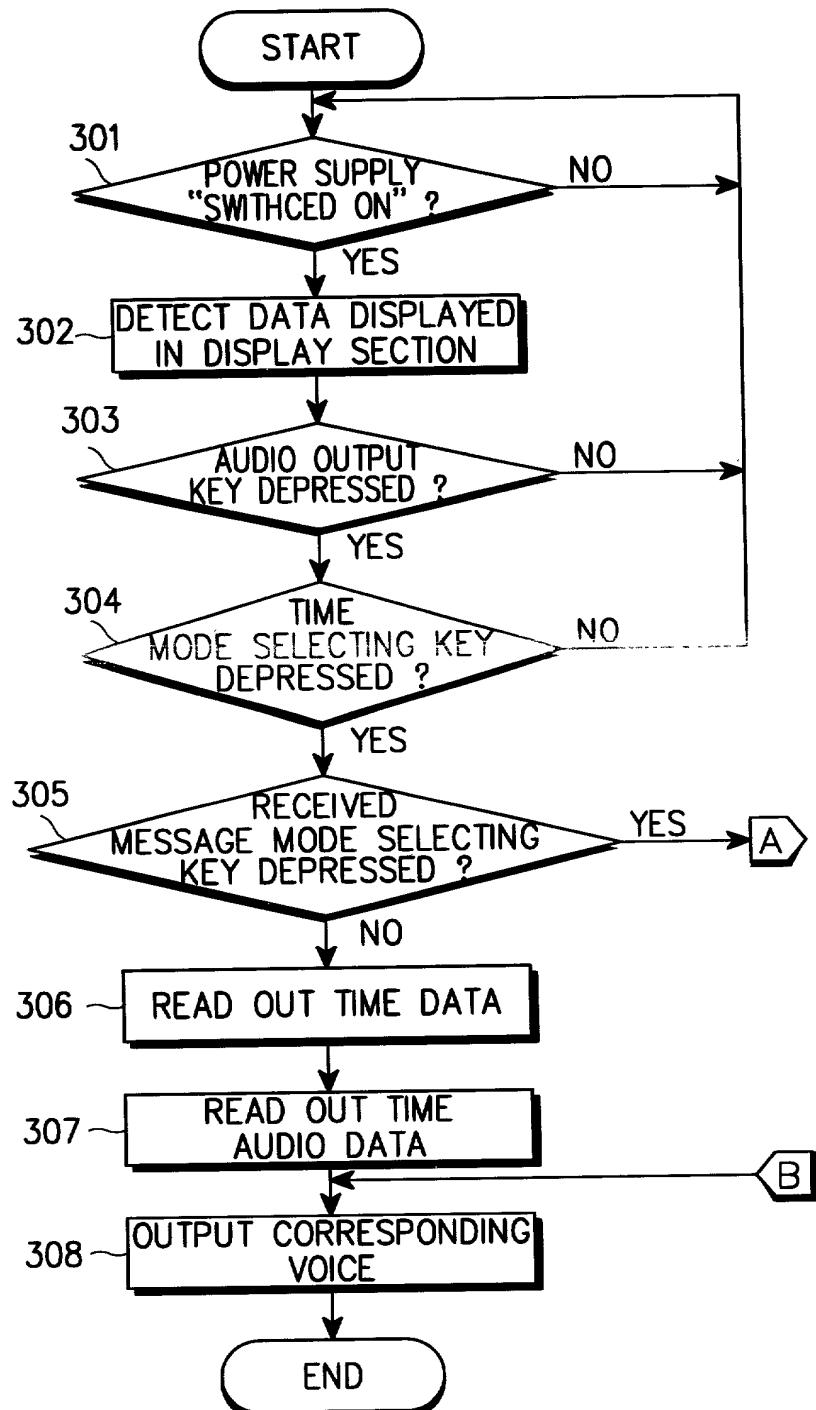


FIG. 2A

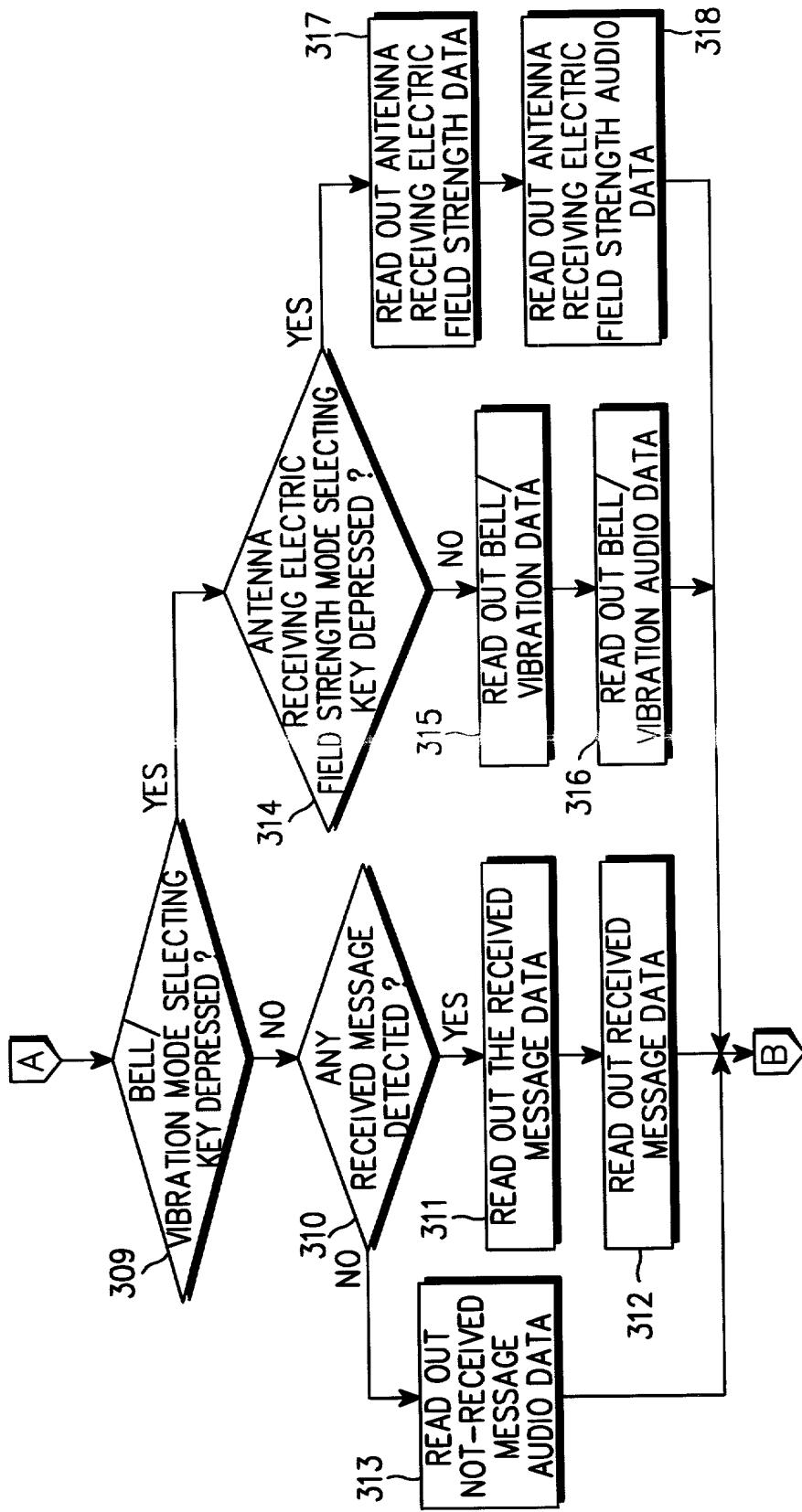


FIG. 2B

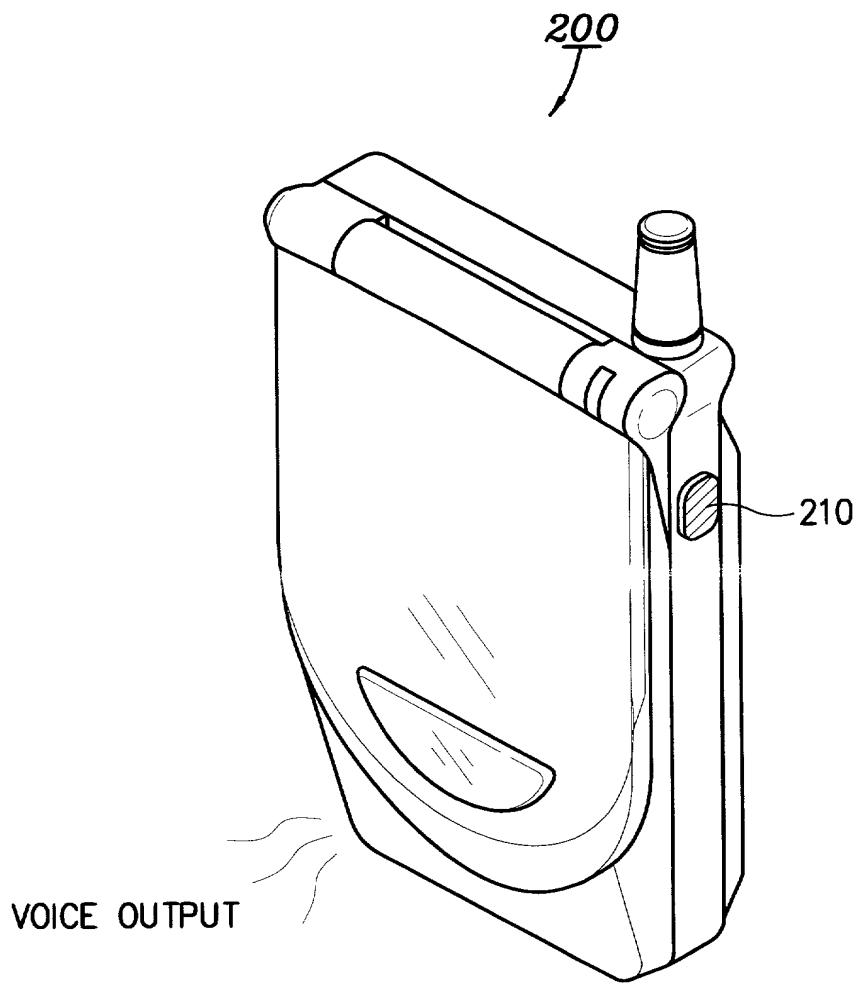


FIG. 3

DECLARATION

AS A BELOW NAMED INVENTOR, I hereby declare that:

My residence, post office address and citizenship are as stated next to my name.

I believe that I am the original, first and sole (*if only one name is listed below*), or an original, first and joint inventor (*if plural names are listed below*), of the subject matter which is claimed and for which a patent is sought on the invention entitled:

TITLE: DEVICE FOR AND METHOD OF OUTPUTTING DATA ON DISPLAY SECTION OF PORTABLE TELEPHONE
the specification of which either is attached hereto or indicates an attorney docket no. 678-521 (P8994), or:

[] was filed in the U.S. Patent & Trademark Office on _____ and assigned Serial No. _____.

[] and (*if applicable*) was amended on _____.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to patentability and to the examination of this application in accordance with Title 37 of the Code of Federal Regulations §1.56. I hereby claim foreign priority benefits under Title 35, U.S. Code §119(a)-(d) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT international application which designated at least one country other than the United States, or §119(e) of any United States provisional application(s), listed below and have also identified below any foreign applications for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

(Application Number)	(Country)	(Day/Month/Year filed)	Priority Claimed:
1999-34067	Republic of Korea	18/08/1999	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<i>(Application Number)</i>	<i>(Country)</i>	<i>(Day/Month/Year filed)</i>	Yes <input type="checkbox"/> No <input type="checkbox"/>

I hereby claim the benefit under Title 35, U.S. Code, §120, of any United States application(s), or §365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application(s) in the manner provided by the first paragraph of Title 35, U.S. Code, §112, I acknowledge the duty to disclose information material to patentability as defined in Title 37, The Code of Federal Regulations, §1.56(a) which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial Number)	(Filing Date)	(STATUS: patented, pending, abandoned)
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(Application Serial Number)	(Filing Date)	(STATUS: patented, pending, abandoned)
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I HEREBY DECLARE that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 U.S. Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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Inventor's signature: JUN SIK, JANG Date: August 4, 2000
Residence & Post Office Address: 256-1, TaeJon-dong, Puk-gu, Taegu - Kwangyokshi, Korea

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Inventor's signature: _____ Date: _____
Residence & Post Office Address: _____

FULL NAME OF FOURTH JOINT INVENTOR: _____ Citizenship _____

Inventor's signature: _____ Date: _____
Residence & Post Office Address: _____

FULL NAME OF FIFTH JOINT INVENTOR: _____ Citizenship _____

Inventor's signature: _____ Date: _____
Residence & Post Office Address: _____

FULL NAME OF SIXTH JOINT INVENTOR: _____ Citizenship _____

Inventor's signature: _____ Date: _____
Residence & Post Office Address: _____